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UNITED STATES OF AMERICA
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268-0001

Mail Processing Network
Rationalization Service Changes, 2012 Docket No. N2012-1

PRESIDING OFFICER'S INFORMATION REQUEST NO. 6

(Issued March 12, 2012)

The Postal Service is requested to respond to the following questions to clarify the record on its request for an advisory opinion under 39 U.S.C. 3661(c) regarding the Mail Processing Network Rationalization Service Changes, 2012 (MPNR).[1] In order to facilitate inclusion of the requested material in the evidentiary record, the Postal Service shall have a witness attest to the accuracy of the answers and be prepared to explain, to the extent necessary, the basis for the answers at the hearings.[2] Responses shall be provided no later than March 19, 2012.

The following question(s) are directed to witness Rosenberg (USPS-T-3).

1. Please refer to library reference USPS-N2012-1/46, which contains analysis supporting the cost-per-square-foot estimates used in the LogicNet optimization model.

   a. Please document all steps used to develop the vetted square footage in Worksheet 2 from "Per Piece Cost Regression" from the square footage data provided in Worksheet 1.

[1] Request of the United States Postal Service for an Advisory Opinion on Changes in the Nature of Postal Services, December 5, 2011 (Request).

[2] The Postal Service may redirect questions as necessary to provide a complete response, including the provision of institutional responses, if necessary.

b. Please explain why the Postal Service used the cost-per-square-foot estimates developed using the vetted square footage data in Worksheet 2 from "Per Piece Cost Regression" as opposed to cost-per-square-foot estimates developed using the square footage data in Worksheet 1.

c. In "Operational Cost per Square Foot for Logicnet.xls" buildings are divided into the following three groups: (1) Buildings with square feet from 0 to 210,000, (2) Buildings with square feet from 210,000 to 450,000, and (3) Buildings with more than 450,000 square feet.

   i. Please explain fully why the Postal Service selected this particular grouping of facilities.

   ii. The 0 to 210,000 square feet grouping represents 73 percent of the sample, the 210,000 to 450,000 square feet grouping represents 23 percent of the sample, and the more than 450,000 square feet grouping represents 3 percent of the sample.

      A. Please provide a regression that uses three groupings with equal sample sizes.

      B. Please discuss the relative advantages and disadvantages of a regression that uses three groups with equal sample sizes as compared with a regression that uses three groups with unequal sample sizes.

2. Please refer to library reference USPS-N2012-1/46 “Operational Cost per Square Foot for Logicnet.xls”.

   a. Please confirm that the Postal Service identified the cost-per-square-foot for three facility sizes according to the process described below. If not confirmed, please explain.

Step 1	Regress Total Cost on vetted square feet and vetted square feet^2 to identify the coefficients of the following regression equation: $$y = \alpha + \beta_1 x + \beta_2 x^2$$ Where y is the total cost per facility, and x is the vetted square footage. Then the Postal Service concludes that for all facilities, the average cost per square foot is β_1
Step 2	Group Facilities according to size and identify the midpoint for each group to be the following: $x_1 = 105{,}000\ x_2 = 330{,}000\ x_3 = 725{,}000$
Step 4	Identify the slope, *m*, of the Total Cost Equation to be $$m = \frac{dy}{dx} = \beta_1 \times x + 2 \times \beta_2 \times x$$
Step 5	Calculate the slope at each of the three midpoint sizes identified in Step 2 to be m_1, m_2, m_3
Step 6	Calculate the predicted total cost for each of x_1, x_2, x_3 according to the relationship identified in Step 1 $$\bar{y_i} = \alpha + \beta_1 x_i + \beta_2 x_i^2$$
Step 5	Identify the equation of a line passing through point x_i by solving for b according to the following formula $$\bar{y} = m_i x_i + b_i$$ Then b_i and m_i are reported in the equations identified in cells C42, C43, and C44

b. If confirmed, please explain the discrepancies shown in the table below between the constants, b_i, presented in cells C43 and C44 and the those calculated using the methodology outlined in Step 6.

Facility Size	Cells C43 and C44	Step 6 Calculations
210,000-450,000	8,391,559	8,685,184
450,000 - Max	39,320,059	44,940,259

c. Please explain why the Postal Service did not identify the cost per square foot, m_i, by running the equation identified in Step 1 separately for each of the three facility groupings identified by the Postal Service.

d. The table below presents the cost-per-square-foot, m_i, following the steps outlined in part (a) and part (c).

Facility Size	Part (a)	Part (c)
Min - 210,000	238.13	250.87
210,000-450,000	198.98	142.33
450,000 - Max	130.25	187.98

Please confirm the estimates for part (c), and discuss the difference in the relationship between facility size and cost-per-square-foot implied by the two methodologies, paying particular attention to the fact that the estimates are monotonically decreasing using the methodology outlined in part (a), but are not monotonically decreasing using the methodology in part (c).

The following question(s) are directed to witness Elmore-Yalch (USPS-T-11).

3. Please refer to the Postal Service's response to POIR No. 5, question 24, parts (b) and (c).

   a. In the following table, please indicate with a yes or no response if a given point estimate of a volume change, β_i, is statistically different from zero by performing a Wald test of the null hypothesis $H_0: \beta_i = 0$ against the alternative hypothesis $H_a: \beta_i \neq 0$.

	National Accounts	Premier Accounts	Preferred Accounts	Small Businesses	Home-Based Businesses	Consumers
First-Class Mail						
Presort FCM						
Priority Mail						
Express Mail						
Regular Periodical						
Not-for-Profit Periodical						
Regular Bulk/Standard						
Not-for-Profit Bulk/Standard						
Total Mail Volume						

   b. Please confirm that in order to perform the statistical test described in part (a), a two-sided test is required. If not confirmed, please explain and identify the necessary statistical test.

   c. A one-sided Wald test is used to test whether the sign of a change in volume estimate is significant. For example, consider the point estimate of the change in total mail volume for National Accounts, $\beta = -0.14\%$.

Then, a test of whether this estimate is significantly negative is constructed according to the following null and alternative hypotheses: $H_0: \beta \geq 0$ and $H_a: \beta < 0$.

i. Please confirm that for null hypothesis involving inequalities, a one-sided test is required. If not confirmed, please explain and identify the necessary statistical test.

ii. In the following table, please indicate with a yes or a no response if you are able to reject the null hypothesis that the estimate provided is of the opposite sign at the 5 percent level.

	National Accounts	Premier Accounts	Preferred Accounts	Small Businesses	Home-Based Businesses	Consumers
First-Class Mail						
Presort FCM						
Priority Mail						
Express Mail						
Regular Periodical						
Not-for-Profit Periodical						
Regular Bulk/Standard						
Not-for-Profit Bulk/Standard						
Total Mail Volume						

4. Please refer to the file “First-Class Mail_LargeCommercial_Final_DataFile_USPS-N2012-1.NP1.sav” and the variables Q12BILLS, Q12PAYMENTS, Q12ADVERTISING, Q12COMMUNICATION, Q12DOCUMENTS, Q12MAGAZINES, Q12NEWSPAPERS, and Q12NEWSLETTERS documented on pages 108-113 of your testimony.

   a. Please confirm that most of the responses to these questions are missing, or are not provided.

   b. Please explain how you handled these missing responses in calculating adjusted total mail volumes.

5. Please refer to the file “First-Class Mail_SmallHome_Final_DataFile_USPS-N2012-1.NP1.sav” and the variables Q12BILLS, Q12PAYMENTS, Q12ADVERTISING, Q12COMMUNICATION, Q12DOCUMENTS, and Q12NEWSLETTERS documented on pages 132-136 of your testimony.

   a. Please confirm that most of the responses to these questions are missing, or are not provided.

   b. Please explain how you handled these missing responses in calculating adjusted total mail volumes.

6. Please refer to the file “First-Class Mail_Consumers_Final_DataFile_USPS-N2012-1.NP1.sav” and the variables U6C, U7C, and U8C documented on pages 144-147 of your testimony.

   a. Please confirm that most of the responses to these questions are missing, or are not provided.

   b. Please explain how you handled these missing responses in calculating adjusted total mail volumes.

7. Please refer to USPS-N2012-1/NP1. The files “First-Class Mail_LargeCommercial_Final_DataFile_USPS-N2012-1.NP1.sav”, “First-Class Mail_SmallHome_Final_DataFile_USPS-N2012-1.NP1.sav”, and “First-Class Mail_Consumers_Final_DataFile_USPS-N2012-1.NP1.sav” contain observations that were not used in volume calculations due to missing data. Please provide a dataset which contains only those observations which were used in calculating the volume impact forecasts presented on pages 50-52 of USPS-T-11. For each observation, please include all associated sample weights and observation identifiers in addition to the following data:

   a. From the Large Business Survey: Q1_2012A, Q1_2012B, Q1_2012C, Q1_2012D, Q1_2012DD, Q1_2012E, Q1_2012F, Q1_2012_G, Q2A_2012, Q2B_2012, Q2C_2012, Q2D_2012, Q2DD_2012, Q2E_2012, Q2F_2012, Q2G_2012, Q3, Q4, Q5A, Q5B, Q6A, Q6B, Q7A, Q7B, Q8A, Q8B, Q8C, Q8D, Q9A, Q9B, Q10A, Q10B, Q11A, Q11B, Q12BILLS, Q12PAYMENTS, Q12ADVERTISING, Q12COMMUNICATIONS, Q12DOCUMENTS, Q12MAGAZINES, Q12NEWSPAPERS, Q12NEWSLETTERS

   b. From the Small/Home Business Survey: Q1_2012A, Q1_2012B, Q1_2012C, Q1_2012D, Q1_2012DD, Q1_2012_G, Q2A_2012, Q2B_2012, Q2C_2012, Q2D_2012, Q2DD_2012, Q2E_2012, Q2F_2012, Q2G_2012, Q3, Q4, Q5A, Q5B, Q6A, Q6B, Q7A, Q7B, Q8A, Q8B, Q8C, Q8D, Q11A, Q11B, Q12BILLS, Q12PAYMENTS, Q12ADVERTISING, Q12COMMUNICATIONS, Q12DOCUMENTS, Q12NEWSLETTERS

   c. From the Consumer Survey: U1A_2012, U1B_2012, U2A_2012, U2B_2012, U3A_2012, U3B_2012, U5A, U5B, U6A, U6B, U6C, U7A, U7B, U7C, U8A, U8B, U8C

d. In addition, please provide documentation of the steps used to remove unused observations from “First-Class Mail_LargeCommercial_Final_DataFile_USPS-N2012-1.NP1.sav”, “First-Class Mail_SmallHome_Final_DataFile_USPS-N2012-1.NP1.sav”, and “First-Class Mail_Consumers_Final_DataFile_USPS-N2012-1.NP1.sav”.

Ruth Y. Goldway
Presiding Officer